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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,422	08/08/2001	Osamu Tsujii	35.C15675	9933

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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,422

Applicant(s)

TSUJII ET AL.

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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The applicant's response to the Office Action has clarified the claim to foreign priority and as such (US 2001/0028392 A1 to Yamamoto et al) is deemed to not be prior art and thus the rejection of claims 1-15 have been overcome.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by (USPN 4,675,747 to Hanma et al).

In regards to claim 1 Hanma et al, herein Hanma, discloses a “sensor region” (element 3 of Fig. 3), a “read-out circuit” (elements 11 and 4 of Fig. 3), and a switch (element 12 of Fig. 3) to selectively activate the “read-out circuit” for the image sensor during read-out (column 4, line 59 – column 5, line 37; column 6, lines 52-58). Hanma discloses the claimed “power supply unit” (element 7 of Fig. 3) as a “power source for supplying electric power to each of the blocks (column 1, lines 35-36),” or “independently” supplying power to each of the blocks, namely independently supplying power “to said sensor region and to said read-out circuit.”

In regards to claim 2 see examiners notes on the rejection of claim 1. Note that in Fig. 3 Hanma discloses the separate wires leading to each block wherein there is a first wire or “power circuit adapted to supply the power to said sensor region,” and a second wire or “power circuit adapted to supply the power to said read-out circuit.”

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-4 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,675,747 to Hanma et al) in view of (USPN 5,060,069 to Aoki).

In regards to claim 3 Hanma discloses supplying power to all of the blocks at the same time. Aoki discloses independently supplying power to the signal processing block (element 18 of Fig. 1) and the compression block (element 22 of Fig. 1) and only when they are being used so as to save power (column 3, lines 1-51), wherein the system control (element 40 of Fig. 1) supplies power to these blocks at the corresponding times of use. In other words the Aoki reference as a whole teaches supplying power to camera systems independently only when those systems are being used so as to save power. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have adapted Hanma's invention so as to have a power supply control circuit to only supply power to the image sensor and scanning circuit when they are in use in order to save power. As such, note that Aoki discloses the use of a switch (element 28 of Fig. 1) to control the supply of power to the compression block. Also, it is an implied part of the system control to use logical switches in order to enable power to be distributed to each of the blocks.

In regards to claim 4 see Hanma's disclosed timing diagram in Fig. 4. It would be obvious to model the control of power to each of the blocks based on this timing diagram as discussed above.

In regards to claim 10 note that it is an implied part of the signal processing block (element 4 of Fig. 3) to amplify the signal with the use of an amplifier.

In regards to claim 11 note that Hanma teaches the image sensor to be exposed to electromagnetic "radiation," namely light.

In regards to claim 12 note that the "first region included in said image sensing section" is the image sensor and the "second region including the first region and larger than the first

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region” is the entire image sensing section, namely the image sensor and the read-out circuit. As such, note that during read-out the image sensor still needs power in order to retain the charges accumulated therefore by the teaching of Aoki the image sensor would still have power supplied to it during the read-out process.

In regards to claim 13 note the timing diagram in Fig. 4 of Hanma’s disclosure. Also note that Hanma teaches the image sensor to be exposed to electromagnetic “radiation,” namely light.

In regards to claims 14 and 15 see examiners notes on the rejection of claims 1-4.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,675,747 to Hanma et al) in view of (USPN 5,060,069 to Aoki) in further view of (USPGP 2002/0050568 A1 to Nonaka).

In regards to claim 5 see examiners notes on the rejection of claim 4. Neither Hanma or Aoki disclose the use of any kind of “radiation generator.” Note that it is very well known in the art to use image sensors for measuring all different kinds of radiation, namely x-ray radiation. Nonaka discloses using an imaging device with an x-ray machine as suggested above, therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used the teachings of Nonaka in order to properly modify an image sensor for use with a radiation generator and for the exposure of x-ray radiation. As such, Nonaka discloses two timing diagrams for the operation of different embodiments of the disclosed invention. As shown in the timing diagram of Fig. 6 and described in the flow chart of Fig. 10, Nonaka

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discloses that “based on a first operation timing of a radiation generator,” or the irradiation start detection signal shown in step S15 of Fig. 10 and curve 56 of Fig. 6, the image sensing unit switches to the image sensing state in S16 of Fig. 10, wherein based on the teaching of Aoki the power would then be supplied to the image sensor. Nonaka further discloses that “based on a second operation timing of said radiation generator,” or the irradiation end detection signal shown in S18 of Fig. 10 and curve 57 of Fig. 6, the image sensing unit switches to the read-out state in S19 of Fig. 10, wherein based on the teaching of Aoki the power would then be supplied to the read-out circuit.

In regards to claim 6 see examiners notes on the rejection of claim 5. Note that the “ready-request signal” is the irradiation start detection signal and the “state ready for radiation exposure” is one in which the radiation generator exceeds a predetermined threshold. Note that the read-out is activated “based on a request for exposure to said radiation generator,” namely the end of the request for exposure, wherein the “request for exposure” is the irradiation start detection signal and the end of the request for exposure is the irradiation end detection signal.

Assuming arguendo examiner offers a second rejection of claim 6 based upon Hanma’s timing diagram of Fig. 4. Note curve (f) of Fig. 4 wherein Hanma discloses operating the “read-out” circuit in order to clear out any transient charges based on the “request for exposure,” namely the depression of the shutter button shown on curve (a) of Fig. 4. Note that based on the teachings of Aoki the power would be supplied to the “read-out” circuit for a period of time “based on a request for exposure.” Note that Nonaka discloses an image sensing preparation state on curve 58 of Fig. 6. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used Hanma’s image sensing preparation in Nonaka’s

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invention because they both supply the same function however Hanma more particularly illustrates this function.

In regards to claim 7 see examiners notes on the rejection of claims 5 and 6.

In regards to claim 8 see examiners notes on the rejection of claim 5. Note that based on the teaching of Aoki, after the signals are read out of the image sensor then both the image sensor and read-out are not needed. Therefore as an extension of the teaching of Aoki it would have been obvious to terminate power to both the image sensor and the read-out circuit after the read-out circuit finishes reading out all of the signals.

In regards to claim 9 see examiners notes on the rejection of claim 5. Note that in the timing diagram of Fig. 4 disclosed by Hanma that no power is supplied to anything in "a first state" and after operation of the shutter button the control circuit powers the blocks being used primarily, as taught by the combination of references discussed in the rejection of claim 1, wherein during this "second state" no power is supplied to the read-out circuit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:00am to 4:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone numbers for

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the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office whose telephone number is 703-306-0377.

Brian C Genco
Examiner
Art Unit 2615



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600